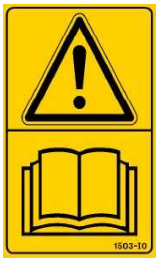
H2O.AQUARIUM

H2O.AQUARIUM

INNOVATION IN EVERY DROP

# USER'S MANUAL

# WELCOME TO H2O.AQUARIUM



Thank you for purchasing our water treatment technology of advanced oxidation

In order to get a complete benefit from this product, please read the safety and use instructions.

Keep the manual in a safe place for future references.

# TABLE OF CONTENTS

# MODELS H2O.AQUARIUM

| MODEL | REFERENCE |
|---|---|
| AOP300AQUA | AQU0010300 |
| AOP600AQUA | AQU0020600 |
| AOP1800AQUA | AQU0031800 |
| AOP3000AQUA | AQU0043000 |
| AOP6000AQUA | AQU0056000 |
| AOP012KAQUA | AQU006012K |

Before installing the equipment, verify the model.

# COMPONENTS H2O.AQUARIUM

| H2O.AQUARIUM MODEL | | AOP 300 AQUA | | AOP 600 AQUA | | AOP 1800 AQUA | |
|---|---|---|---|---|---|---|---|
| NUMBER | DESCRIPTION | PART NUMBER | PIECES | PART NUMBER | PIECES | PART NUMBER | PIECES |
| 1 | Hermetic ballast | SPS013H024 | 1 | SPS013H024 | 1 | SPS014H080 | 1 |
| 2 | Lamp connector | SPS025CONC | 1 | SPS025CONC | 1 | SPS026CONL | 1 |
| 3 | Bushing POM-C | SPS021CM22 | 1 | SPS022CM28 | 1 | SPS022CM28 | 1 |
| 4 | Quartz sleeve 20X22X235 mm | SPS033C235 | 1 | SPS034C460 | 1 | SPS035C895 | 1 |
| 5 | UV lamp | SPS029L015 | 1 | SPS030L024 | 1 | SPS031L080 | 1 |
| 6 | Titanium converter 22 mm | SPS027CT22 | 1 | SPS028CT28 | 1 | SPS028CT28 | 1 |
| 7 | Titanium dioxide reactor | HTR0010500 | 1 | HTR0021000 | 1 | HTR0040003 | 1 |
| 8 | Gloves (pair) | SPS079GUAN | 1 | SPS079GUAN | 1 | SPS079GUAN | 1 |
| 9 | User's Manual | | 1 | | 1 | | 1 |
| 10 | Control Quality Documents | | 1 | | 1 | | 1 |
| 11 | Guaranty Document | | 1 | | 1 | | 1 |
| 12 | Check list | | 1 | | 1 | | 1 |

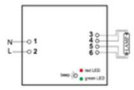
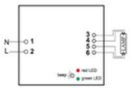
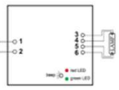
# COMPONENTS H2O.AQUARIUM

| H2O.AQUARIUM | MODEL | AOP 3000 AQUA | | AOP 6000 AQUA | | AOP 012K AQUA | |
|---|---|---|---|---|---|---|---|
| NUMBER | DESCRIPTION | PART NUMBER | PIECES | PART NUMBER | PIECES | PART NUMBER | PIECES |
| 1 | Hermetic ballast | SPS014H080 | 1 | SPS014H080 | 1 | SPS014H080 | 1 |
| 2 | Lamp connector | SPS026CONL | 1 | SPS026CONL | 2 | SPS026CONL | 4 |
| 3 | Bushing POM-C | SPS022CM28 | 1 | SPS022CM28 | 2 | SPS022CM28 | 4 |
| 4 | Quartz sleeve 20X22X235 mm | SPS035C895 | 1 | SPS035C895 | 2 | SPS035C895 | 4 |
| 5 | UV lamp | SPS031L080 | 1 | SPS031L080 | 2 | SPS031L080 | 4 |
| 6 | Titanium converter 22 mm | SPS028CT28 | 1 | SPS028CT28 | 2 | SPS028CT28 | 4 |
| 7 | Titanium dioxide reactor | HTR0050005 | 1 | HTR0060010 | 1 | HTR0070020 | 1 |
| 8 | Gloves (pair) | SPS079GUAN | 1 | SPS079GUAN | 1 | SPS079GUAN | 1 |
| 9 | User's Manual | | 1 | | 1 | | 1 |
| 10 | Control Quality Documents | | 1 | | 1 | | 1 |
| 11 | Guaranty Document | | 1 | | 1 | | 1 |
| 12 | Check list | | 1 | | 1 | | 1 |

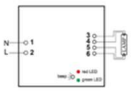
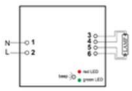
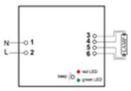
# SPECIFICATIONS H2O.AQUARIUM

H2O.AQUARIUM

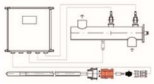
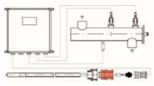
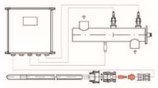
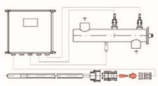
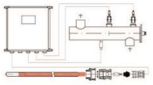
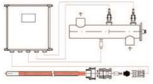
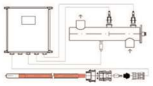
| TiO2 REACTOR | | AOP 300 AQUA | AOP 600 AQUA | AOP 1800 AQUA |
|---|---|---|---|---|
| | |  |  |  |
| 1 | Dimensions | L: 246 mm Ø: 45 mm | L: 473 mm Ø: 76 mm | L: 883 mm Ø: 60 mm |
| 2 | Aquarium capacity | Up to 300 liters | From 300 to 600 liters | From 600 to 1800 liters |
| 3 | Flow water | 500 l/h | 1000 l/h | 3000 l/h |
| 4 | Maximum pressure | 8 bar | 8 bar | 8 bar |
| 5 | In \| Out connections | G 1/2" | G 3/4" | G 1" |
| 6 | UV lamp | 15 W | 24 W | 80 W |
| 7 | Quartz sleeve | 20X22X235 mm | 25X28X460 mm | 25X28X895 mm |
| 8 | Number of lamps and quartz sleeves | 1 and 1 | 1 and 1 | 1 and 1 |
| 7 | IP | 21 | 21 | 21 |

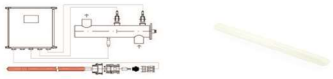
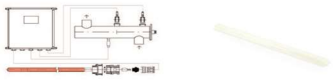
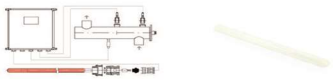
| HERMETIC BALLAST | | | | |
|---|---|---|---|---|
| | |  |  |  |
| 1 | Voltage | 110 or 220 V | 110 or 220 V | 110 or 220 V |
| 2 | Efficiency | >90% | >90% | >90% |
| 3 | Operation Frequency | 40-60 Hz | 40-60 Hz | 40-60 Hz |
| 4 | Dimensions | 105x60x30 mm | 105x60x30 mm | 204x70x45 mm |
| 5 | LED Lamp Status | Green LED: lamp on<br>Red LED: lamp failure<br>Buzzer function lamp failure.<br>  | Green LED: lamp on<br>Red LED: lamp failure<br>Buzzer function lamp failure.<br>  | Green LED: lamp on<br>Red LED: lamp failure<br>Buzzer function lamp failure.<br>  |
| 6 | Installation restrictions | Do not connect to the network before installing or maintenance period.<br>·Do not cut or damage the cables input or output . | Do not connect to the network before installing or maintenance period.<br>·Do not cut or damage the cables input or output . | Do not connect to the network before installing or maintenance period.<br>·Do not cut or damage the cables input or output . |
| 7 | Characteristics | Starting: Pre-heating | Starting: Pre-heating | Starting: Pre-heating |
| 8 | Number of ballasts | 1 | 1 | 1 |
| 9 | Power consumption | 20 W | 30 W | 110 W |
| 10 | IP | 65 | 65 | 65 |

H2O.AQUARIUM

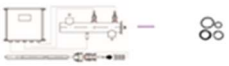
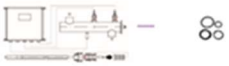
| | | AOP 3000 AQUA | AOP 6000 AQUA | AOP 012k AQUA |
|---|---|---|---|---|
| | |  |  |  |
| **TiO2 REACTOR** | | | | |
| 1 | Dimensions | L: 894 mm Ø: 76 mm | L: 891 mm Ø: 120 mm | L: 956 mm Ø: 160 mm |
| 2 | Aquarium capacity | From 1800 to 3000 liters | From 3000 to 6000 liters | From 6000 to 12000 liters |
| 3 | Flow water | 5000 l/h | 10000 l/h | 20000 l/h |
| 4 | Maximum pressure | 8 bar | 8 bar | 8 bar |
| 5 | In \| Out connections | G 1 1/2" | G 2" | DN100 |
| 6 | UV lamp | 80 W | 80 W | 80 W |
| 7 | Quartz sleeve | 25X28X895 mm | 25X28X895 mm | 25X28X895 mm |
| 8 | Number of lamps and quartz sleeves | 1 and 1 | 2 and 2 | 4 and 4 |
| 7 | IP | 21 | 21 | 21 |
| | |  |  |  |
| **HERMETIC BALLAST** | | | | |
| 1 | Voltage | 110 or 220 V | 110 or 220 V | 110 or 220 V |
| 2 | Efficiency | >90% | >90% | >90% |
| 3 | Operation Frequency | 40-60 Hz | 40-60 Hz | 40-60 Hz |
| 4 | Dimensions | 204x70x45 mm | 352X252X142 mm | 456X356X162 mm |
| 5 | LED Lamp Status | Green LED: lamp on<br>Red LED: lamp failure<br>Buzzer function lamp failure.<br>  | Green LED: lamp on<br>Red LED: lamp failure<br>Buzzer function lamp failure.<br>  | Green LED: lamp on<br>Red LED: lamp failure<br>Buzzer function lamp failure.<br>  |
| 6 | Installation restrictions | Do not connect to the network before installing or maintenance period.<br>·Do not cut or damage the cables input or output . | Do not connect to the network before installing or maintenance period.<br>·Do not cut or damage the cables input or output . | Do not connect to the network before installing or maintenance period.<br>·Do not cut or damage the cables input or output . |
| 7 | Characteristics | Starting: Pre-heating | Starting: Pre-heating | Starting: Pre-heating |
| 8 | Number of ballasts | 1 | 2 | 4 |
| 9 | Power consumption | 110 W | 200 W | 385 W |
| 10 | IP | 65 | 65 | 65 |

# REFERENCES H2O.AQUARIUM

| CASQUILLO| *HOLDER OF SLEEVE* | Recambios h2o.TITANIUM \| *h2o.TITANIUM spare parts* | Referencia \| *Reference* |
|---|---|---|
|   | Casquillo POM-C 22 MM<br>HOLDER POM-C 22 MM<br><br>*Incluye las dos juntas.\| *Both o-rings included.* | SPS021CM22 |
|   | Casquillo POM-C 28 MM<br>HOLDER POM-C 28 MM<br><br>*Incluye las dos juntas.\| *Both o-rings included.* | SPS022CM28 |
| **CONECTORES \| *CONNECTORS*** | **Recambios h2o.TITANIUM \| *h2o.TITANIUM spare parts*** | **Referencia \| *Reference*** |
|   | Conector lámpara 15-24 W<br>LAMP CONNECTOR 15-24 W | SPS025CONC |
|   | Conector lámpara 80-105 W<br>LAMP CONNECTOR 80-105 W | SPS026CONL |
| **LÁMPARAS \| *LAMPS*** | **Recambios h2o.TITANIUM \| *h2o.TITANIUM spare parts*** | **Referencia \| *Reference*** |
|   | Lámpara UV 15W<br>15 W UV LAMP<br><br>**425 mA; 15w* | SPS029L015 |
|   | Lámpara UV 24W<br>24 W UV LAMP<br><br>**425 mA; 24w* | SPS030L024 |
|   | Lámpara UV 80W<br>80 W UV LAMP<br><br>**800 mA; 80w; T = 20 - 55ºC* | SPS031L080 |

| PROTECTORES \| *SLEEVES* | Recambios h2o.TITANIUM \| *h2o.TITANIUM spare parts* | Referencia \| *Reference* |
|---|---|---|
|  | Protector de cuarzo 20X22X235<br>QUARTZ SLEEVE 20X22X235<br>**20x22x235 mm* | SPS033C235 |
|  | Protector de cuarzo 25X28X460<br>QUARTZ SLEEVE 25X28X460<br>**25x28x465 mm* | SPS034C460 |
|  | Protector de cuarzo 25X28X895<br>QUARTZ SLEEVE 25X28X895<br>**25 x 28 x 895 mm.* | SPS035C895 |

| BALASTROS \| *DRIVERS* | Recambios h2o.TITANIUM \| *h2o.TITANIUM spare parts* | Referencia \| *Reference* |
|---|---|---|
|  | Balastro hermético lámparas 15-24 W<br>HERMETIC BALLAS 15-24 W LAMPS | SPS013H024 |
|  | Balastro hermético lámparas 80 W<br>HERMETIC BALLAST 80 W LAMPS | SPS014H080 |

| *JUNTAS \| O-RINGS* | Recambios h2o.TITANIUM \| *h2o.TITANIUM spare parts* | Referencia \| *Reference* |
|---|---|---|
|  | Kit de juntas AOP 300 AQUA<br>*O-rings kit AOP 300 AQUA*<br>**Incluye un lote completo.\| Includes a complete service.* | SPS063D005 |
|  | Kit de juntas AOP 600 AQUA<br>*O-rings kit AOP 600 AQUA*<br>**Incluye un lote completo.\| Includes a complete service.* | SPS064D124 |
|  | Kit de juntas AOP 1800 AQUA<br>*O-rings kit AOP 1800 AQUA*<br>**Incluye un lote completo.\| Includes a complete service.* | SPS066I003 |
|  | Kit de juntas AOP 3000 AQUA<br>*O-rings kit AOP 3000 AQUA*<br>**Incluye un lote completo.\| Includes a complete service.* | SPS067I005 |
|  | Kit de juntas AOP 6000 AQUA<br>*O-rings kit AOP 6000 AQUA*<br>**Incluye un lote completo.\| Includes a complete service.* | SPS068I010 |
|  | Kit de juntas AOP 012K AQUA<br>*O-rings kit AOP 012K AQUA*<br>**Incluye un lote completo.\| Includes a complete service.* | SPS069I020 |

# THE H2O.AQUARIUM REACTOR

H2O.AQUARIUM is an **innovative, sustainable, virtually maintenance-free**, and continuously operating technology developed specifically for domestic aquariums and ponds.

It minimizes the advanced oxidation process, allowing the equipment to be installed in any space **without affecting the existing flora and fauna in the system**.

H2O.AQUARIUM is entirely manufactured from **titanium dioxide**.

It generates highly oxidizing hydroxyl radicals through the exposure of ultraviolet radiation to the inner surface of the reactor. These radicals **eliminate all organic materials** passing through them, but they **only** operate **within the reactor**. **No radicals are transported into the aquarium water**, mainly due to the nanosecond lifespan of a radical.

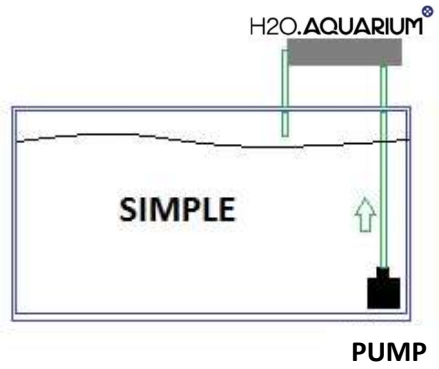
**The flora and fauna remain safe and in improved condition** when using H2O.AQUARIUM.

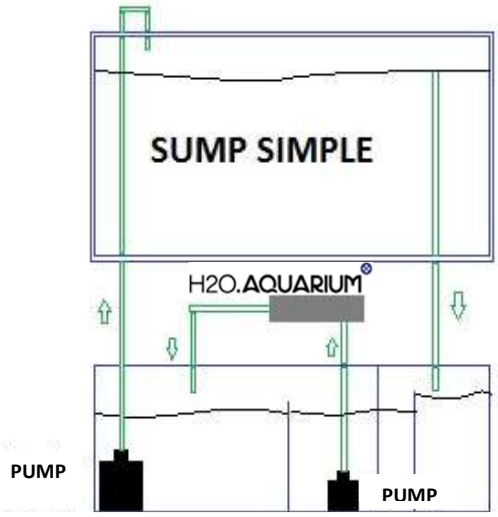
For more information visit our web site www.h2oaquarium.com.

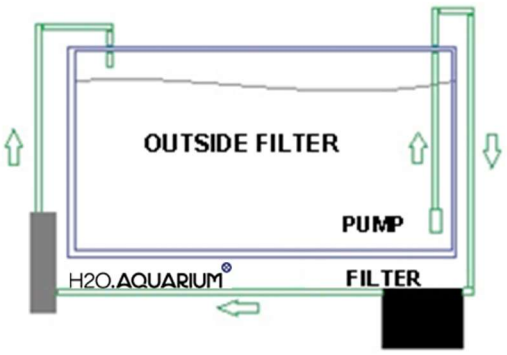
## Discover the magic of a maintenance-free aquarium

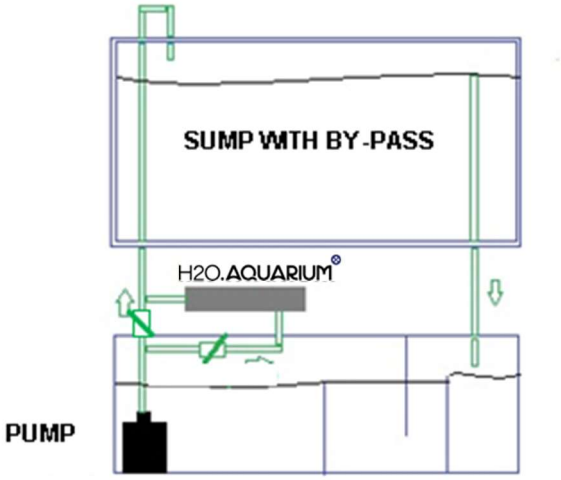
# INSTALLATION of H2O.AQUARIUM

Depending on your aquarium installation, you can choose different ways to install H2O.AQUARIUM reactor:






The flow rate of the pump, depending on the model, should be the next:

| MODEL H2O.AQUARIUM | FLOW RATE PUMP |
|---|---|
| AOP 300 AQUA | FROM 250 L/H TO 500 L/H |
| AOP 600 AQUA | FROM 450 L/H TO 1000 L/H |
| AOP 1800 AQUA | FROM 900 L/H TO 3000 L/H |
| AOP 3000 AQUA | FROM 1000 L/H TO 5000 L/H |
| AOP 6000 AQUA | FROM 2500 L/H TO 10000 L/H |
| AOP 012K AQUA | FROM 8000 L/H TO 20000 LE/H |

Depending on the quality of the water of the aquarium, the flow rate can vary. We recommend testing the result with different flow rates until you find the one that gives the desired result.

**Before installing the system it is essential to CHECK AND VERIFY that:**

1. The water pressure inside the reactor does not exceed 8 bars.
2. The system will not operate under vacuum pressure.
3. The ambient temperature at the installation site does not exceed 40ºC.
4. The temperature of the water inside the reactor does not exceed 50ºC.
5. The flow of water to be treated is adequate with the size of the unit to be installed.
6. There is no chance that the water inside the reactor will freeze.
7. The water drainage point is within 5 meters from where the equipment is to be installed.
8. There is enough space to perform the lamp replacement and the maintenance of the reactor.
9. The quality of the water is adequate, it does not contain abrasive materials and it is within the limits established in previous sections.

### 1.1. Reactor body installation

The H2O.AQUARIUM reactor must be installed horizontally for comfort and convenience of maintenance. It is possible to install it vertically, with the lamps connected in the upper position so that they are not affected by any spill or water leak.

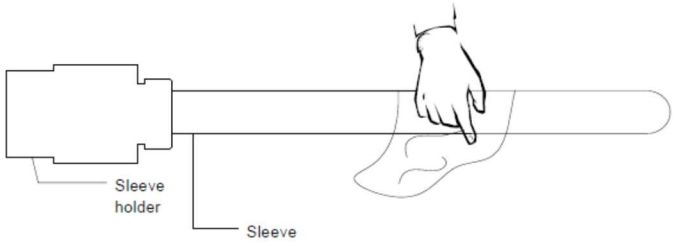
## Attention!

**Be sure to leave enough free space on the side of the reactor where the lamps are located, or where appropriate, on top of it to be able to remove them, both to carry out the installation and to change them when their useful life expires.**

### 1.2. Quartz sleeves installation.

Put on the cotton gloves supplied with the **H2O.AQUARAIUM** kit before installing these components so that your fingers do not come into direct contact with them.

1. Carefully remove the quartz protector from the carton and wipe it clean with a clean cloth. **Do not touch it with your fingers!**




2. Place the quartz protector carefully inside the bushing making sure that it passes through the O-ring and that it sets on the elbow located on the other side of the seal.

3. Carefully insert the quartz protector into the bushing inside the H2O.AQUARIUM reactor through the titanium converter and screw and tighten firmly by hand making sure before that the O-ring of the bushing is well located so that it correctly performs its sealing function. Do not use a tightening tool.

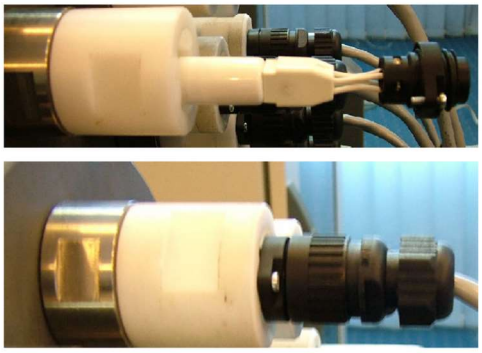
## Attention!

**Once the quartz sleeves and all the devices previously described are installed, you are in a position to perform the hydraulic test of the system to detect leaks.**

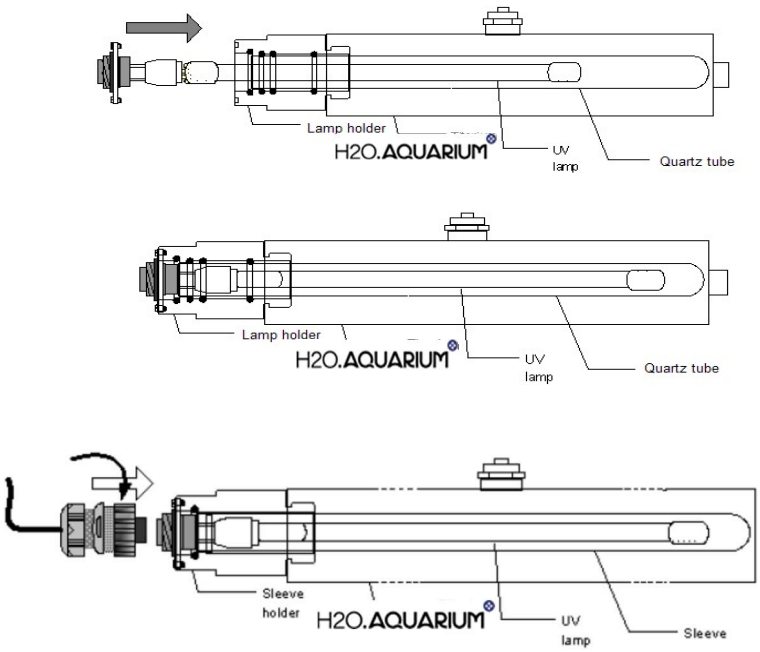
### 1.3. UV lamps installation.

Once the hydraulic test has been carried out and it has been verified that there is no water leak, the UV lamps can be installed.

1. Put on the cotton gloves supplied with the H2O.AQUARIUM kit before installing these components so that your fingers do not come into direct contact with the UV lamps.
2. Carefully remove the UV lamp from the cardboard packaging and wipe it clean. **Do not touch with your fingers!**
3. Insert the UV lamp inside the quartz protector and connect it to the 4-pin connector, which only has only one position, by screwing the screws on the bushing of sleeve to it.



4. Once the UV lamp (8) is installed correctly, connect it to the corresponding lamp power cable (14).



# MAINTENANCE of H2O.AQUARIUM

### 1.1. Replacement of an ultraviolet lamp.

The service life is 10.000-12.000 hours when working continuously. Every time any of the lamps is turned on or off, their service life is reduced by 24 hours.

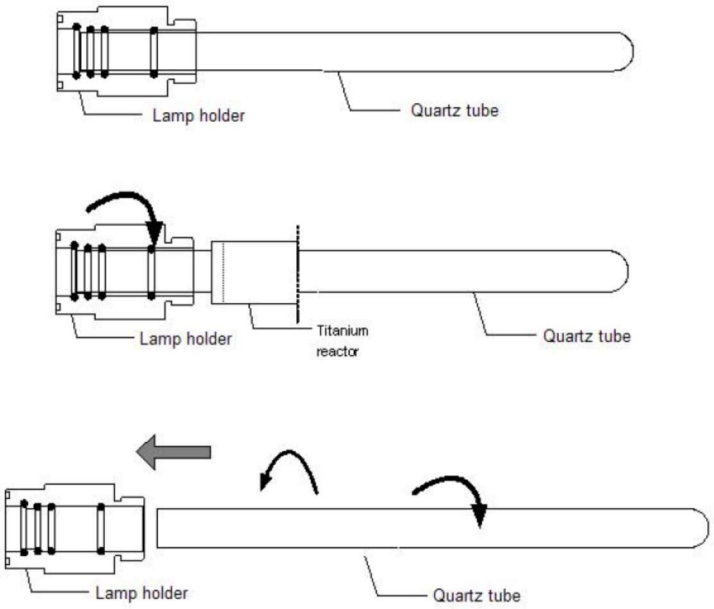
1. Disconnect the electrical supply.
2. Unscrew the 4-pin connector from the UV lamp.
3. Unscrew the 2 screws that fix the UV lamp to the polymer socket and carefully remove it by taking it from the head connector.
4. Before continuing with this procedure, the gloves supplied with the H2O.AQUARIUM kit must be put on so that the fingers do not come into direct contact with the UV lamp or the quartz protector.
5. Carefully remove the UV lamp from the cardboard packaging and wipe it clean**. Do not touch it with your fingers!**
6. Remove the 4-pin connector from the UV lamp to be replaced and connect it to the new lamp.
7. Complete the procedure by connecting the 4-pin connector to the new UV lamp.
8. Connect the electrical supply.

### 1.2. Cleaning and replacing the quartz sleeves.

The quartz protector is manufactured in such a way that it allows practically all the radiation from the UV lamp to pass through it. Any imperfection or dirt present on the surface of the it, will reduce the radiation that reaches the surface of the reactor and, therefore, will lower the efficiency of the system.

It is recommended to replace the quartz protector upon the detection of any imperfections or dirt.

1. Disconnect electrical power.
2. Close the inlet and outlet valves to the reactor.
3. Drain the water contained in the reactor.
4. Unscrew the 4-pin lamp connector.
5. Follow the procedure having put on the gloves to prevent the fingers from marking the UV lamp or the quartz protector.
6. Unscrew the bushing from the reactor completely without removing the quartz protector.




7. Carefully remove the quartz protector for cleaning.
8. The quartz protector can be cleaned using a clean cloth; If there are embedded particles that are difficult to remove, a solution of a weak acid (acetic, citric) can be used, but without pH falling never below 4, ensuring its subsequent rinsing.
9. Carefully assemble in reverse order ensuring that the reactor contains water inside before reconnecting the box to the light.

# Attention!

**Depending on the quality of the water, the frequency of inspection and cleaning of the reactor will vary.**

### 1.3. Cleaning the reactor and the components in contact with the water inside it.

1. Disconnect the power supply.
2. Close the inlet and outlet valves to the reactor.
3. Empty the water inside the reactor.
4. The reactor can be cleaned using a weak acid such as acetic or citric. The pH never can be below 4.
5. Keep the solution inside for four (4) hours.
6. Then rinse with water until the correct pH is achieved.

### 1.4. Ballast replacement

Ballasts are electronic devices that do not usually fail. If they do, it is during the first 24-48 hours of operation. However, when a ballast stops working for any reason, the problem must be verified and, if it has reached the end of its useful life, replace it.

Clean with a soft, dry cloth. Do Not use liquid or aerosol cleaners. Never immerse in water or other liquid.

# SAFETY MEASURES of H2O.AQUARIUM

### UV radiation

Direct exposure to ultraviolet radiation can be harmful to the skin and eyes. **Do not look directly into UV light or expose your skin to radiation or UV light**. If you have burned the skin or irritated eyes, you should immediately contact a doctor.

### Electric supply

Check the voltage and frequency of the equipment.

Whenever any operation or manipulation is performed on the H2O.AQUARIUM system, make sure that the power supply is disconnected.

Attention!
Read the User's manual

High voltage

Damage

Ayes protection needed

# DECLARATION OF CONFORMITY

## DECLARATION OF CONFORMITY

VANN WORLD, S.L.
VALENCIA, SPAIN

**Declare that we are responsible for the products under the brand**

H2O.AQUARIUM®

AQU0010300
AQU0020600
AQU0031800
AQU0043000
AQU0056000
AQU006012K
AQU0070680

**This statement is in accordance with the following documents and directives:**

**Directive(s):**

Low Voltage Directive (LVD) 2014/35/EU
Electromagnetic Compatibility Directive (EMC) 2014/30/EU

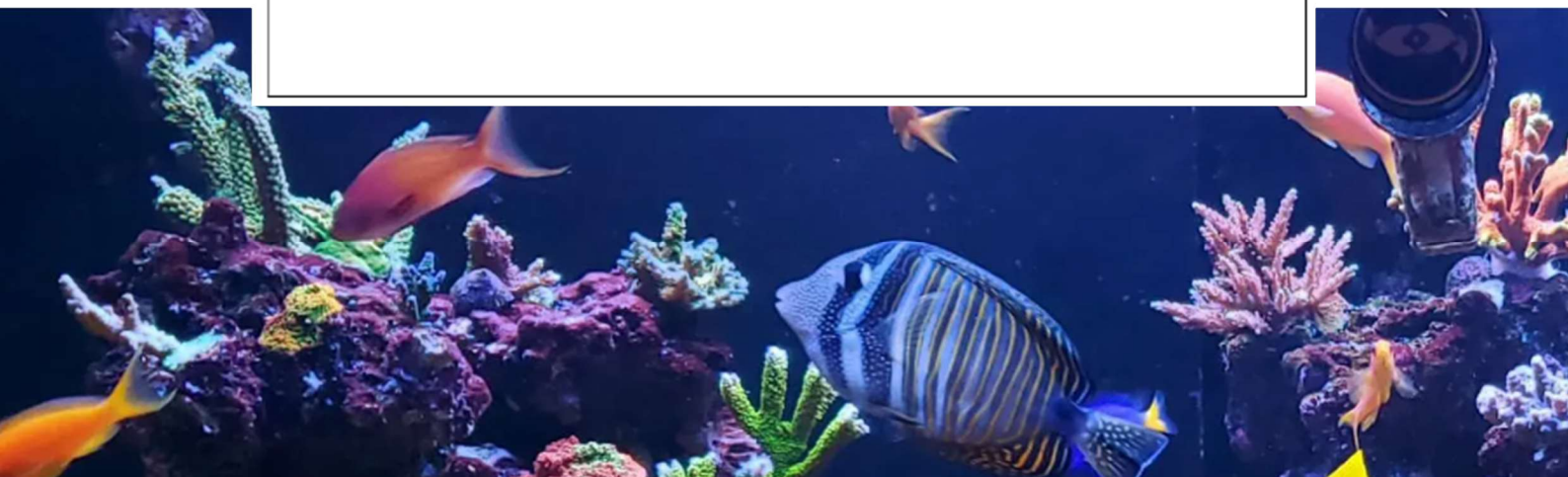
**Standard/(s)**

EN 60335-1:2012 + A15:2021 + A16:2023:
EN 60335-2-109:2010
EN 62471:2008

**We declare that the equipment complies with the above requirements and that factory approval has been fulfilled by VANN WORLD, S.L.**

March 2024

Vicente Picó Puchades. CEO VANN WORLD, S.L.



H2O.AQUARIUM

**The easiest way to enjoy your dream aquarium**

www.h2oaquarium.com